

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

C-CATION TECHNOLOGIES, LLC §
§
v. § Case No. 2:11-CV-30-JRG-RSP
§
COMCAST CORP., et al. §

**CLAIM CONSTRUCTION
MEMORANDUM AND ORDER**

On April 30, 2013, the Court held a hearing to determine the proper construction of the disputed claim terms in U.S. Patent No. 5,563,883 (herein after the “‘883 patent”).¹ After considering the arguments made by the parties at the hearing and in the parties’ claim construction briefing, the Court issues this Claim Construction Memorandum and Order.

BACKGROUND

The ‘883 patent is entitled “DYNAMIC CHANNEL MANAGEMENT AND SIGNALLING METHOD AND APPARATUS” and is based upon an application filed July 18, 1994. Claims 1, 3-7, 10 and 12 are asserted. The parties present twelve groupings of claim disputes. The ‘883 patent generally relates to the field of “two-way multi-media communication on a shared transmission media such as coaxial cable-TV network, and more specifically to methods and apparatus for signalling channel management and protocol.” 1:6-11. The Background of the Invention describes the prior art as including a central controller, a shared transmission media and a plurality of remote terminals dispersed geographically. Communication bandwidth is divided into traffic-bearing channels and signalling channels that utilize signalling protocols to resolve contention for access. 1:15-32. The ‘883 Patent states that

¹ References to the ‘883 patent will be made in the format Column:Line.

the objects of the disclosed invention relate to improvements in the signalling channel assignment process. 2:35-62.

Two independent claims are asserted, method claim 1 and method claim 6. Claim 1 recites a variety of steps for accomplishing the allocation and assignment of the signalling data channels between the central controller and remote terminals, and the assignment of the remote terminals to a signalling data channel. Claim 6 recites a variety of steps for controlling access between the central controller and the remote terminals through a polling and contention resolving process.

APPLICABLE LAW

A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See id.* at 1313. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term’s context in the asserted claim

can be very instructive. *Id.* Other asserted or unasserted claims can also aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352,

1356 (Fed. Cir. 2004) (“As in the case of the specification, a patent applicant may define a term in prosecuting a patent.”).

Although extrinsic evidence can be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.*

B. Claim Indefiniteness

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. Whether a claim meets this definiteness requirement is a matter of law. *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1344 (Fed. Cir. 2007). A party challenging the definiteness of a claim must show it is invalid by clear and convincing evidence. *Id.* at 1345.

“Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1250 (Fed. Cir. 2008) (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005)). That is, the “standard [for finding indefiniteness] is met where an accused infringer shows by clear and

convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” *Halliburton*, 514 F.3d at 1249-50. The ultimate issue is whether someone working in the relevant technical field could understand the bounds of a claim. *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 783 (Fed. Cir. 2010).

In determining whether that standard is met, i.e., whether the claims at issue are sufficiently precise to permit a potential competitor to determine whether or not he is infringing, we have not held that a claim is indefinite merely because it poses a difficult issue of claim construction. We engage in claim construction every day, and cases frequently present close questions of claim construction on which expert witnesses, trial courts, and even the judges of this court may disagree. Under a broad concept of indefiniteness, all but the clearest claim construction issues could be regarded as giving rise to invalidating indefiniteness in the claims at issue. But we have not adopted that approach to the law of indefiniteness. We have not insisted that claims be plain on their face in order to avoid condemnation for indefiniteness; rather, what we have asked is that the claims be amenable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds. . . . By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of patent validity . . . and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.

Exxon Research & Eng’g Co. v. U.S., 265 F.3d 1371, 1375 (Fed. Cir. 2001) (citations and internal quotation marks omitted).

DISCUSSION

A. “signalling data”² (claim 1)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
information concerned with the control of communications	information that establishes and controls channels over which the central controller and remote terminals communicate

The parties propose defining “signalling data” in terms of the data’s function. C-Cation describes the function as “control of communications” whereas Defendants describe the function as “establishes and controls channels.”

Parties’ Positions

C-Cation

According to C-Cation, the specification teaches that signalling data is used beyond merely establishing and controlling channels. C-Cation asserts that the specification teaches that the controller also “sends command to the remote terminal” as part of the signalling data. 7:43-44. C-Cation notes that Figure 9 depicts various signalling data for implementing a telephone network (including “incoming call command,” “release command,” “on-hook,” “off-hook,” “ringing,” “dial digits,” “incoming call blocking,” and “incoming call unblocking”) and observes that these commands are each concerned with controlling communications over existing channels. ‘883 Figure 9. C-Cation contrasts these commands with other commands that more clearly relate to establishing a channel such as “serial number of the remote terminal for channel assignment during registration process,” “channel re-assignment command,” and “multiple channel request (bandwidth-on-demand).” ‘883 Figure 9. As another example, C-Cation contends that the “ringing” command is yet another part of signalling data that is improperly excluded by Defendants’ construction. C-Cation explains that the “ringing” command merely

² The term is found only in the preamble but as the term relates to “signalling data channel” which is in the body of the claim there is no dispute that a construction is needed.

sends a message from the remote terminal to the central controller to indicate that the remote terminal is ringing. Thus, the ringing command is merely part of a series of messages sent between the terminal and the central controller and does not establish the channel or control the channel. Dkt. 191 at 4. Because Defendants' construction excludes telephony commands relating to existing channels, C-Cation argues that Defendants' construction should be rejected. Dkt. 187 at 13-14.

Defendants

Defendants note that the specification states that a "traffic bearer channel is established via signalling protocol over the signalling data channels" and that a channel is allocated via the "signalling protocol." 7:47-49, 6:35-37. Defendants also cite to multiple extrinsic evidence dictionaries and glossaries to support their contention that "signalling data" relates to establishing and control of connections. Dkt. 188 at 9. Defendants maintain that the telephone commands cited by C-Cation all relate to establishing and controlling channels, and therefore are covered by their proposed construction. Defendants argue that C-Cation's construction is overly broad and thereby removes any distinction between signalling data channels and user traffic channels. Dkt. 188 at 10.

Analysis

As Defendants' citations demonstrate, signalling data includes data that is used to establish and control channels. 7:46-49, 6:35-37. However, the specification is equally clear that signalling data can do more than just establish and control channels. The telephony commands described in the specification include commands that relate to the establishment and control of channels, but also include commands that are more accurately described as being directed to controlling communications, such as the "incoming call command," "release command," "on-hook," "off-hook," "ringing," "dial digits," "coming call blocking," and

“incoming call unblocking” commands. Figure 9. These functions all relate to a channel that is already in existence.

Defendants do not argue that such commands are not “signalling data,” and contend that such commands fall within the scope of establishing and controlling channels. Although Defendants may intend to cover all of the telephony commands, the Court is persuaded that Defendants’ proposed construction does not make this clear. The ‘883 Patent relates in part in a broad sense to allocating channels and assigning terminals. Abstract, 2:35-58, 3:35-54. In that context, “establishing and controls” channels could imply a meaning that excludes many of the telephony commands from Figure 9 cited by C-Cation which are commands relevant to an established channel. The signalling data described in the specification may thus not only control the channel but also the communications (for example the telephone call) provided to a remote terminal over a channel.

The Court rejects Defendants’ inclusion of “over which the central controller and remote terminals communicate” in the Court’s construction because the claim already includes limitations elsewhere concerning the relationship of the signalling data channels to the central controller and the remote terminals. For example, claim 1 recites “establishing communications between said central controller and said plurality of remote terminals via a plurality of signalling data channels” and monitoring “the signalling data channels in use between said central controller and said plurality of remote terminals.”

The Court construes “**signalling data**” to mean “**information concerned with the control of communications**.”

B. “signalling data channels” (Claims 1, 3, 4, 5, 6, and 7)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
channel(s) used for carrying signalling or data traffic	the exclusive channel(s) for carrying the signalling data and no more than sporadic (i.e., infrequent, isolated) user information, as distinct from channel(s) dedicated to carrying only user information

The parties’ dispute focuses on whether signalling data channels are channels utilized for carrying signalling data (with only sporadic user information) or whether the channels can carry signalling or user traffic.

Parties’ Positions

C-Cation

C-Cation asserts that the specification makes clear that there can be signalling data channels and traffic bearer channels (5:15-21) and makes clear the types of communications that each type of channel may carry:

As depicted in FIG. 2, the bandwidth is channelized for carrying traffic in the forward and reverse direction. Data channels are used for carrying signalling or data traffic while bearer channels are used for carrying user traffic similar to circuits in telephony.

5:58-62. C-Cation particularly notes the “signalling or data traffic” language. C-Cation asserts that though the specification describes embodiments in which only sporadic user data is sent over signalling data channels, there is no support in the claims or specification for adding such limitation to the construction. C-Cation asserts that signalling channels carry both signalling and data traffic while a traffic bearing channel carries only user traffic when required. Dkt. 191 at 3 (citing 7:46-49).

Defendants

Defendants argue that C-Cation relies on one isolated line in the specification to support a construction of this term that is so broad as to encompass any type of channel. According to

Defendants, the patent distinguishes between two types of channels (signalling data channels and traffic bearing channels) (Dkt. 188 at 6 (citing 3:4-11)), and note that the background and description of the prior art in the patent acknowledges that the dynamic allocation of traffic bearing channels was known in the art (Dkt. 188 at 6 (citing 1:32-35, 1:60-64)). Defendants argue that the specification focuses on allocating two different types of channels, pointing to passages in the specification that state how “the present invention presents a method to dynamically allocate both signalling data and traffic-bearing channels” (2:4-7), and how an object of the invention was to present “a flexible and extensible method for signalling channel management” and “a flexible and extensible method for assigning remote terminals to the signalling channels” (2:37-41).

Defendants cite to the specification for evidence supporting their construction’s limiting of the term to “no more than sporadic . . . user information”:

The controlled multiple access method is used, on each forward signalling data channel in parallel, for sporadic user data transfer or signalling purposes. (3:52-55; *see also* 7:41-43.)

The signalling information or sporadic user data . . . (13:8-13; 13:17-19.)

Sporadic user data shares the RF data modulator and demodulator with signalling information . . . (13:59-63.)

Defendants argue that the patent teaches communicating user data over the traffic bearer channels. Dkt. 188 at 4-5, 7. Defendants assert that this conforms to the ordinary meaning of a “signalling data channel,” which would be a channel that only carries signalling information. Dkt. 188 at 7 (citing extrinsic evidence dictionary). Defendants assert that the patentee clearly was his own lexicographer and limited the user data that can be carried on a signalling channel to only “sporadic data.”

Defendants assert the lone citation relied upon by C-Cation actually supports Defendants' position because the language "data channels are used for carrying signalling or data traffic while bearer channels are used for carrying user traffic . . ." establishes that whatever the signalling data channels carry it is not "user traffic." Dkt. 188 at 8 (quoting 5:59-62). Defendants maintain that C-Cation's construction is divorced from the context of the disclosure.

Analysis

The parties agree that a signalling data channel is not limited to only signalling data. As C-Cation notes, the specification includes a description in which the signalling data channel carries signalling data and user data. 5:58-62. Defendants seek to incorporate a limitation from what is at most a single disclosed embodiment of a signalling data channel where the signalling data channel carries signalling data and only sporadic user traffic. 3:52-55; 13:8-13; 13:17-19. Defendants have not pointed to language where more than sporadic user traffic is disclaimed by the patentee, or was otherwise emphasized to be a point of novelty. Moreover, the '883 patent includes a passage in which the use of a separate traffic bearer channel for user data is described as merely being an optional alternative embodiment: "[i]f dedicated channel is required to meet the user's need, the traffic bearer channel is established via signalling protocol over the signalling data channels." 7:46-49.

As to Defendants' discussion of the background and prior art and the distinctions being made, the key concept in those passages was that the '883 patent discloses a method of dynamically allocating signalling data channels as opposed to only dynamically allocating traffic bearer channels. 1:32-35; 1:60-64; 2:5-8; 2:36-41. Such passages do not emphasize that something more than sporadic user data must be excluded from a signalling data channel. In the context of the intrinsic record as a whole, a signalling data channel is not limited to a channel that at most carries sporadic user traffic.

The Court construes “**signalling data channel**” to mean “**channels used for carrying signalling data; the channels may also carry user traffic.**”

C. Preamble Terms

“Shared Transmission means for signalling data and user information” (claim 1)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction. To the extent construction is deemed necessary: a medium for transmitting signalling data and user information between a plurality of remote terminals and a central controller Phrase should not be construed under 35 USC §112(6). If, however, construction under 35 USC §112(6) is deemed appropriate: Function: shared transmission of signalling data and user information Structure: includes: (1) airwaves; (2) coaxial cable; (3) fibre optic cable; or (4) wires.	If construed under 35 U.S.C. §112(6): Function: carrying both signalling data and user information. Structure: a physical medium or media having forward and reverse bandwidth separated into dedicated signalling data channels and dedicated user traffic channels as shown in Fig. 2 If not construed under §112(6): a physical medium or media having forward and reverse bandwidth separated into dedicated signalling data channels and dedicated user traffic channels

“User information” (claim 1)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction. To the extent construction is deemed necessary: information intended for a user or sent from a user	information, distinct from the signalling data, transmitted to or from end users of the system; also called user data or user traffic

“Shared Transmission means” (claim 6)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Phrase should be given its ordinary meaning and does not require construction. To the extent construction is deemed necessary: a medium for transmitting communications between a plurality of remote terminals and a central controller Phrase should not be construed under 35 USC §112(6). If, however, construction under 35 USC §112(6) is deemed appropriate: Function: shared transmission Structure: includes: (1) airwaves; (2) coaxial cable; (3) fibre optic cable; or (4) wires	Same proposed construction as a “shared transmission means for signalling data and user information”.

The terms in question are found in the preambles of claims 1 and 6. The parties dispute whether these terms are limitations of the claims. If the terms are limitations, the parties dispute the constructions of these limitations, including the applicability of means-plus-function constructions.

Parties’ Positions

C-Cation

C-Cation asserts that these terms only appear in the preambles of claims 1 or 6 and are not claim limitations because the preambles merely provide a field of use, and the preambles do not set out any aspect of the invention because the body of the claims sets forth a structurally complete invention. Dkt. 187 at 6. C-Cation asserts that the relevant law is:

A preamble is not regarded as limiting, however, when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention. (internal quotations omitted)

Am. Med. Sys., Inc. v. Biolitec, Inc., 618 F. 3d 1354, 1358-59 (Fed. Cir. 2010), and:

It is well settled that if the body of the claim sets out the complete invention, and the preamble is not necessary to give life, meaning and vitality to the claim, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation. (internal quotations committed).

Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1310 (Fed. Cir. 2002). C-Cation asserts that the preambles in question were not relied upon during prosecution and the particular terms do not affect the structure or the steps of the claim body. Dkt. 191 at 1. C-Cation also points to Federal Circuit law that a preamble “generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention.” *Catalina Mktg. Int’l, Inc., v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). If the terms are construed, C-Cation asserts that the terms have ordinary meanings that need no construction. C-Cation also objects to Defendants’ characterization of the terms as means elements. Dkt. 187 at 6-9.

Defendants

Defendants assert that the preambles “focus the reader on the invention being claimed” and recite a “framework” that is “fundamental” to the claimed invention. Dkt. 188 at 12 (quoting *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343-44 (Fed. Cir. 2006)). Defendants assert that the specification emphasized that the invention sought to overcome problems of “shared common transmission media.” Dkt. 188 at 12 (quoting 1:15-20 and citing 1:6-12, 2:65-3:1). Defendants assert that numerous other limitations found in the preamble are found in the body of the claim and asserts that when a preamble is employed in such manner, it is proper to construe the preamble as limiting. Dkt. 188 at 12 (citing *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1357 (Fed. Cir. 2012)).

If construed, Defendants assert that the limitations in question are means-plus-function limitations and assert that their constructions conform to the specification. Dkt. 188 at 13-14.

As to the “user information,” in the function of the Claim 1 means, Defendants assert that in the specification “user data,” “user traffic” and “bearer traffic” are used interchangeably. Defendants assert such traffic is described in the specification as being separate from the signalling data. Dkt. 188 at 10-11. In particular, Defendants seek to incorporate the concept that the communication medium must include separate user channels distinct from the signalling channels. Dkt. 188 at 10-11.

Analysis

Generally, a preamble is not considered a limitation of the claim. However, a preamble is properly considered a limitation of a claim “if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 239 F.3d 801, 808 (Fed. Cir. 2001). Where the deletion of the preamble phrase in question does not affect the structure or steps of the claimed invention, the phrase is not limiting. *Am. Med. Sys.*, 618 F.3d at 1358-59.

When the body of the ‘883 Patent claims in question are analyzed, the transmission means phrases do not affect the steps of the claimed methods. Here, the preamble merely recites the system environment in which the method steps may occur. A central controller, remote terminals and transmission means (the physical medium between the controller and terminals) are recited in the preamble. Notably, the claim steps never recite nor rely on what particular medium is used to connect the controller and the terminals. The claim then focuses entirely on the allocation of signalling data channels between the controller and the terminals. Thus, for instance claim 1 step (a) merely calls out establishing communication between the controller and the terminals such that signalling data channels are created between the controller and terminals, notably not including any limitations as to the particular physical medium used for the connection. The remaining portions of the claims focus on the assignment of, monitoring of,

reassignment determination of and reassigning of signalling data channels. Similarly, claim 6 describes the system environment. Claim 6 focuses on controlling multiple accesses between the controller and terminals. Claim 6 step (a) merely calls out establishing communication between the controller and the terminals such that signalling data channels are created between the controller and terminals, notably not including any limitations as to the particular physical medium used for the connection.

The remaining elements of the claim focus on polling the remote terminals simultaneously by the controller to determine if there are pending requests and resolving contentions among the terminals by the controller if there is a pending request. The transmission means is not included in the claim body, is not needed to give “life or vitality” to the claimed steps, and the claimed steps are drafted without including any limitations as to the particular physical transmission means.

Contrary to Defendants’ assertions, the specification does not underscore the importance of a transmission medium having separate user traffic and signalling channels. Though Defendants point to several citations to shared transmissions, the vast majority of the specification focuses on aspects of managing the signalling channels. Figures 3-15 and associated text. In addition, the described “objects of the invention” and the described “benefits” focus on the signalling channels. 2:35-61; 4:1-14. Finally, Defendants’ citation to *Deere & Co. v. Bush Hog, LLC* for the proposition that when preamble limitations are found in the body of the claim the entire preamble is limited, is not persuasive. The preamble in that case was merely “a rotary cutter deck comprising:”. *Deere & Co.* 703 F.3d at 1353. The ‘883 Patent preambles present a very different situation. The Court finds the preamble terms in question are not claim limitations and therefore do not require a construction.

D. “remote terminals” (Claims 1, 3, 4, 6, 7, 10 and 12)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
communication devices at a location remote from the central controller	Equipment for forward and reverse communication with a central controller over a specified pair of dedicated signalling data channels and dedicated user traffic channels.

The parties’ primary dispute relates to whether the manner in which communications occur between the central controller and the remote terminals should be included in the construction of “remote terminals.”

Parties’ Positions

C-Cation

C-Cation asserts that the term is known in the art and that C-Cation’s construction merely clarifies what the individual words mean for the jury. As to “remote,” C-Cation cites to passages at 1:15-17, 3:14-16, 5:8-11 and 1:47-52 to establish that remote devices are devices that are geographically dispersed from the central controller. Dkt. 187 at 14-15. C-Cation asserts that the specification states that “terminals” are communication devices, quoting passages that state that “the remote terminals are equipment supporting the users’ communication need” (3:14-16) and “all remote terminals 14 are equipment supporting the users’ communication need and are distributed throughout the network” (5:24-26). C-Cation asserts that Defendants’ construction goes beyond the meaning ordinarily understood in the art. C-Cation asserts that Defendants’ construction improperly adds functional limitations into the clear structural language of the claim, thus reading a purpose requirement into the claim element. Dkt. 187 at 15 (citing *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1367-68 (Fed. Cir. 2012)). C-Cation asserts that the specification merely describes the terminals as communication devices, consistent with extrinsic evidence. Dkt. 191 at 5. C-Cation asserts that the Summary of Invention passage at 3:14-24 merely describes the remote terminals as “capable” of assigning traffic bearing channels.

Defendants

Defendants assert the primary dispute is whether the remote terminals must accommodate separate signalling and user traffic channels. Defendants assert that the “invention” is consistently described as such and thus the Court should construe “remote terminals” consistently. Dkt. 188 at 14-15. Defendants cite the statement in the specification that “the present invention presents a method to dynamically allocate both signalling data and traffic bearing channels and to dynamically assign remote terminals to these channels.” 2:4-7. Defendants also cite to the language in claim 1 that recites “system . . . for signalling data and user information.” Defendants further cite to a passage in the Summary of Invention that describes the remote terminals as having the capability to communicate over signalling data channels and traffic bearer channels. 3:14-24. Defendants assert that this is consistent with the remainder of the specification.

Analysis

There is no debate between the parties that the ordinary meaning of a “remote terminal” does not carry the additional limitations sought by Defendants. Further, the language of the independent claims does not include the limitations Defendants seek. The portions of the specification at 1:15-17, 1:47-52, 3:14-16, 5:8-11 show that the term “remote terminal” was given in its ordinary meaning within the intrinsic record. Thus, “the remote terminals are equipment supporting the users’ communication need” (3:14-16) and “all remote terminals 14 are equipment supporting the users’ communication need and are distributed throughout the network” (5:24-26). Moreover, as to what the claimed remote terminal does, what channels are connected to the remote terminal, what data is sent to and from the remote channel, etc., the remaining elements of the claim body provides the particular limitations required for the claimed remote terminal. Thus, Defendants’ arguments are more appropriately raised with regard to

other elements of the claims. Defendants do not point to any disclaimer or disavowal within the record that support incorporating the limitations they seek. Finally, as noted above with regard to the preamble terms, the focus of the '883 patent is not placed upon the user traffic, but rather the signalling channels, further discrediting Defendants' inclusion of the additional limitations.

The Court construes "**remote terminal**" to mean "**communication devices at a location remote from the central controller.**"

E. Predetermined Channels and Pair of Predetermined Channel Terms

"predetermined signalling data channels of a plurality of signalling data channels" (claim 6)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a forward signalling data channel and a reverse signalling data channel determined prior to assignment	one forward and one reverse signalling data channel that are specified in each remote terminal and the central controller before any attempted communication between the two

"pair of predetermined signalling channels" (claim 1)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
a forward signalling data channel and a reverse signalling data channel determined prior to assignment	one forward and one reverse signalling data channel that are uniquely coupled and that are specified in the remote terminal and central controller before any attempted communication between the two

"each of said plurality of remote terminals can be assigned to any pair of said plurality of signalling data channels" (claim 6)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
each remote terminal may be assigned to any forward signalling data channel and reverse signalling data channel	each remote terminal may be assigned to any uniquely coupled forward and reverse signalling data channels

The parties' proposed constructions present two disputes: (1) the meaning of "predetermined," and (2) the meaning of "pair."

Parties' Positions as to "Predetermined"

C-Cation

C-Cation notes that claim 1 recites in step (a) that "each of said remote terminals being initially assigned to a pair of predetermined signalling data channels." C-Cation explains that such usage shows there is a temporal frame of reference in which a determination is made prior to the assignment. C-Cation objects to Defendants' construction because it adds additional requirements that (1) the channels must be specified in both the remote terminal and the central controller, and that (2) this specification occurs before any attempted communication between the two devices. C-Cation asserts that the claim does not require the assignment to be "specified" or stored in either device, let alone in both. C-Cation also asserts that the claims do not require that the determination be made "before any attempted communication." C-Cation argues that the patentee has not disavowed any claim scope.

Defendants

Defendants assert that the predetermined limitation requires the channels to be determined before communication commences. Defendants cite to the specification as showing that the remote terminals and the central controller know which channels will be used:

Initially the remote terminals will listen to a general poll on FD-1 for registration. If the poll from the central controller is not receiving for an extended period of time, the remote terminal will try FD-2 channel (toggling between FD-1 and FD-2). Once a general poll is sensed on the forward signalling data channel, the remote terminal responds first on RD-1 and then on RD-2 if there has not been an acknowledgment from the central controller

8:61-9:2. Defendants also cite language indicating that the components of the remote terminal are tuned to particular start up channels. Dkt. 188 at 16-17 (citing 14:1-3). Defendants assert the patent teaches no other techniques for establishing communication between the two devices.

Defendants argue that their proposed construction is correct in light of the prosecution history. Defendants assert that the term “predetermined” was added to distinguish prior art that scanned all channels to seek out the proper channel. Dkt. 188 at 17-18.

Finally, Defendants assert that C-Cation’s construction is meaningless because all channels are determined prior to assignment because by definition, if a channel is to be assigned, the channel must be known prior to assignment. Dkt. 188 at 17-18.

C-Cation’s Reply

C-Cation points to the same specification passage at 8:61-9:2 as quoted by Defendants and asserts that this passage shows that registration occurs on either of two forward channels (FD-1 and FD-2) and at least two reverse channels (RD-1 and RD-2). C-Cation asserts there would be no need to perform this process if the precise pair was known before any attempted communication. With respect to the prosecution history argument, C-Cation argues that the amendment in question did not make mention of the disputed term when referencing the prior art Grauel reference. Dkt. 191 at 7 (citing Def. Br. Ex. 7, Amendment A (Oct. 1, 1995) at 13).

Analysis as to “Predetermined”

The Court agrees that C-Cation’s construction gives no meaning to the term “predetermined.” C-Cation’s construction covers assignments of channels even when the channel to be assigned is not predetermined because it is inherent that at some point before any channel (even a non-predetermined channel) is assigned, the channel being assigned would have to be known or identified. Thus, C-Cation’s construction reads out of the claim the “predetermined” nature of the channel.

The claim language itself is instructive as to the meaning of “predetermined.” In claim 1, element (a) begins with “establishing communications” via a plurality of signalling data channels and then states that “each of said remote terminals initially assigned to a pair of predetermined signalling data channels.” That the “initial” channels are the “predetermined” channels provides guidance that the predetermination is accomplished prior to establishing communications. Similarly, claim 6 element (a) reads “establishing communications between said central controller and . . . remote terminals via predetermined signalling data channels.” Thus, the language of claim 6 also implies that the predetermination is performed prior to establishing communications. This conforms to the specification in which the FD-1 and RD-1 channels are determined prior to attempting to establish communication. 8:61-9:2; 6:45-51; 14:1-3. Though more closely aligned with the claims and specification, Defendants’ inclusion of “before any attempted communication between the two” goes too far. For example, Defendants’ construction could be interpreted to exclude the situation in which a system previously had communication, lost communication and then later established communication on predetermined channels.

Parties’ Positions as to “Pair”

C-Cation

C-Cation objects to describing the pairs as “uniquely coupled” because “uniquely coupled” does not appear in the ‘883 patent. C-Cation also asserts that there is nothing in the claim that suggests “uniquely coupled.” C-Cation asserts that Defendants are merely attempting to incorporate concepts from the preferred embodiments. Dkt. 187 at 16-17.

C-Cation further asserts that the “uniquely coupled” language excludes the embodiments described in Figures 3b and 3c. C-Cation asserts that in Figure 3b a single forward channel FD-n is associated with multiple reverse channels RD-o, RD-p and RD-q (with Figure 3c showing an

opposite scenario). Figures 3a-3c, 7:6-31. C-Cation argues that constructions that exclude embodiments are rarely correct. Dkt. 187 at 17.

Defendants

Defendants assert that C-Cation is replacing the term “pair” with “two.” Defendants assert that the term “pair” implies some association such as a “pair” of shoes (left and right shoe). Dkt. 188 at 18. Defendants assert that the specification describes the forward and reverse channels as “coupled.” 3:49-50. Defendants assert that the specification describes Figure 3a as “the simplest arrangement” that is a “pair of forward and reverse data channels forming a terminal group.” 7:8-10. Defendants assert that Figures 3b and 3c are not described as “pairs” but rather as “one-to-many” or “many-to-one” arrangements. 7:8-19.

C-Cation’s Reply

C-Cation asserts that it does not merely define “pair” as “two” but rather as a forward and reverse channel, thus a pair. Dkt. 191 at 5. As to the “coupling” passage cited by Defendants, C-Cation asserts that the sentence in question reads “through the registration process, the central controller assigns the remote terminal to a group supported by coupling of the specific forward and reverse signalling data channels.” 3:47-50. C-Cation asserts that this sentence does not establish that a single forward and reverse signalling channel are coupled, let alone “uniquely coupled.” C-Cation also asserts that the specification teaches that pools of channels are available to be assigned and no mention is made necessitating coupling specific channels together. 8:44-50.

Analysis as to “Pair”

The claim term in question is “pair.” Given an ordinary meaning, “pair” does not mandate a unique coupling. Further, the surrounding claim language does not suggest a unique coupling requirement. Defendants may be correct that “pair” connotes some association,

however, both parties' constructions include that concept as it is not just any two channels but a forward and reverse channel, and thus there is an association. However, such association does not have to be a unique coupling. The specification teaches embodiments in which these two channels are found in one-to-many and many-to-one combinations. Figures 3b and 3c, 7:6-31. Furthermore, as noted by C-Cation, an availability of pools of channels which may be accessed is taught, again contradicting a "uniquely coupled" requirement. 8:44-50. The "coupling" passage cited by Defendants can equally describe any of the embodiments of Figure 3a-3c and thus does not support Defendants' position. The intrinsic record as a whole does not support narrowing the claimed "pairs" to "uniquely coupled."

The Court construes "**predetermined signalling data channels of a plurality of signalling data channels**" to mean "**a forward signalling data channel and a reverse signalling data channel determined prior to establishing communications.**"

The Court construes "**pair of predetermined signalling channels**" to mean "**a forward signalling data channel and a reverse signalling data channel determined prior to establishing communications.**"

The Court construes "**each of said plurality of remote terminals can be assigned to any pair of said plurality of signalling data channels**" to mean "**each remote terminal may be assigned to any forward signalling data channel and reverse signalling data channel.**"

F. “monitoring the status of a plurality of the signalling data channels in use . . . for the usability of said signalling data channels” (Claim 1)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
monitoring at least two of the signalling data channels in use for one or more determining factors of availability	monitoring at least two of the signalling data channels being used for conditions that preclude those channels from communicating the signalling data

The dispute between the parties is focused on the differing meanings the parties give to “usability” as contained in the end of each construction.

Parties’ Positions

C-Cation

C-Cation asserts that the specification lists a number of factors that determine channel availability, which includes the number of terminals using a channel, traffic requirements, past collision count, channel error status, and bandwidth. 8:35-41. C-Cation asserts that Defendants’ construction requires a binary monitoring (either the channel is usable or not). In contrast with Defendants’ position, C-Cation maintains that the specification describes monitoring a number of factors and then determining (based on those factors) whether reassignment is desirable. C-Cation points to the following portions of the specification:

Channel arrangement can be adjusted according to traffic pattern mix and/or more intelligent management scheme can be implemented with various priority lists. 6:54-57.

At any time, the central controller can initiate the terminal re-assignment process if deemed appropriate for the varying traffic demand or other system dynamics. 8:32-34.

The determining factors of signalling data channels availability include the number of remote terminals using the signalling data channel, the traffic requirements, past collision counts, channel error status, and bandwidth of the signalling channel. 8:35-39.

C-Cation argues that Defendants’ construction is improper because it excludes the preferred embodiment, where several factors are monitored. Dkt. 187 at 21.

Defendants

Defendants assert that the subsequent step in the claim uses the “monitoring” to determine if one of the channels “needs” to be reassigned. Defendants assert that reassignment is not optional or elective, but only occurs if it is required. Defendants contend that “usability” refers to whether a channel can be used for signalling or not. Dkt. 188 at 19.

According to Defendants, the Examiner rejected the claims during prosecution as indefinite because it was “not clear” from the claim “if the channels in use are monitored and if so what for.” Dkt. 188 at 20 (quoting Ex. 8 Office Action Aug. 4, 1995 at 2). Defendants assert that the “usability” language was added to the claim in response. Defendants assert that such language must relate to the specification passage which references “usable” in the context of whether or not a connection is possible:

As depicted in FIG. 5, the central controller in the command mode sends the message destined for a specific remote terminal If the expected response is not received at the central controller from the addressed terminal after the time-out period expires, the central controller assumes that either FD-x or RD-x channel is not usable by the addressed remote terminal. In this case, the central controller retries for a number of times, then proceeds with the terminal failure processing if there is still no response from the specific remote terminal. The terminal failure processing removes the failed remote terminal from the group and signals to the wide area network that connection is not possible.

8:1-14. Defendants assert that C-Cation provides no citations to support equating “usability” to “factors of availability.” Defendants also assert that the Figure 6 flowchart for the terminal reassignment process shows that the step of determining the need for reassignment (reassignment diamond), based upon monitoring usability, is different than the step of determining the availability of other channels (available capacity diamond) once the need is established.

C-Cation Reply

C-Cation points to dependent claim 3 which recites that the “monitoring” step may include (a) calculating traffic loads, (b) monitoring past collisions, (c) monitoring error counts and (d) sensing failure of data channels. C-Cation asserts that Defendants seek to limit the monitoring of claim 1 to only example (d) of dependent claim 1. C-Cation asserts that Defendants’ construction is improper because it would make the independent claim narrower in scope than the dependent claim. Dkt. 191 at 8.

Analysis

C-Cation’s construction conforms to the factors determining channel availability listed in the specification. 8:35-39. Immediately preceding that passage, the specification states: “[a]t any time, the central controller can initiate the terminal re-assignment process if deemed appropriate for the varying traffic demand or other system dynamics.” 8:32-34. Determining reassignment in claim step (c) is the step that follows the claimed “monitoring” step. In the context of the claim steps and the specification, it is clear that monitoring may include monitoring a variety of factors. Defendants’ construction could be interpreted to imply that usability means that a channel is either available or not available. Defendants are correct that there is a passage 8:1-14 that focuses on whether or not a connection is possible. However in the context of the intrinsic record as a whole, the monitoring of the channels appears to also include more complex determinations that may weigh a number of factors to determine the advisability of reassignment. 6:54-57, 8:35-41. In such circumstances, usability would imply more of a continuum of determinations of usability. Thus, the patent does not teach that a channel is reassigned only when a channel condition precludes use. Rather, a number of factors are evaluated and based on the multiple factors a decision to reassign may occur. Defendants’ construction limits the monitoring to determine whether channel use is precluded or not. This

conflicts with some of the specification embodiments. Furthermore, Defendants' construction of claim 1 would eviscerate the various types of monitoring explicitly included in claim 3, a claim that was present when the usability limitation was added to claim 1. More particularly, Defendants' construction reduces the four types of monitoring in the steps of claim 3 to only the last step in which a channel use failure is sensed. In context of the claims and the intrinsic record, "usability" is not limited to whether the channel has failed or not. Thus, the Court rejects Defendants' attempt to limit usability to a condition that "precludes those channels from communicating." Having rejected Defendants' narrow interpretation of "usability" the Court finds that the term "usability" does not need further construction.

The Court construes "**monitoring the status of a plurality of the signalling data channels in use . . . for the usability of said signalling data channels**" to mean "**monitoring at least two of the signalling data channels being used for one or more conditions that affect the usability of the signalling data channels.**"

G. "determining whether one of said plurality of remote terminals needs to be reassigned" (Claim 1)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction other than the phrase "remote terminals" as set forth above.	deciding whether a specific remote terminal can no longer communicate signalling data with the central controller over the pair of predetermined signalling data channels

The parties dispute the meaning of the terms "needs to be reassigned" and "one," which are included in the phrase under construction. The primary dispute is whether a channel "needs" to be reassigned only when there is a complete failure of the ability to provide any communications, or whether something less than complete failure could still necessitate a need to reassign.

Parties' Positions

C-Cation

C-Cation asserts that Defendants' construction imposes a binary limitation that the controller must determine whether the remote terminal can communicate on a channel or not. C-Cation asserts that the preferred embodiments teach that reassignment is desirable based on many factors. Dkt. 187 at 22 (citing to the same factors and specification passages as cited with regard to the "monitoring" step). C-Cation asserts that Defendants' construction excludes several of the factors.

Defendants

Defendants assert the claim uses the term "need" and thus the reassignment must stem from the inability to communicate over the channel. At the claim construction hearing, Defendants stated that "if the channel can communicate signalling, there is no need to reassign that terminal to a different alternative signalling channel." Tr. at 105, Dkt. 198. Defendants then explained that they were not asserting that "need" was limited to channel failure, but rather that "a particular terminal cannot communicate on it." *Id.* at 106-07.

Defendants also assert that the claim language addresses whether "one" of said plurality of remote terminals needs to be reassigned. Defendants focus on the use of "one" and argue that the claim does not state "any" or "one or more" but rather focuses on a specific terminal. Defendants assert that the patentee's choice of words was deliberate. Defendants cite to a statement made during prosecution seeking to overcome the Grauel reference as evidence that a terminal-specific determination is what was claimed:

Grauel teaches that each control channel covers a range of mobile radio stations with qualifying identifiers. Grauel's base radio station "meters" the aggregate traffic load of the control channels and adjusts the group codes of the control channels for load spreading. Therefore, it is not intended to select any individual mobile radio station for reassignment.

Dkt. 188 at 22 (quoting Ex. 7 at 13). Defendants assert their construction makes clear that a specific individual remote terminal is reassigned.

C-Cation's Reply

C-Cation asserts that Defendants construction of "needs" reads out the limitations of dependent claim 4 in which the "determining" step is based on (a) sensing overload and (b) sensing failure because Defendants' construction limits claim 1 to the failure aspect. Dkt. 191 at 8. As to the "one" issue, C-Cation asserts that the claim language is clear, and is not limited to a specific remote terminal. C-Cation asserts that the prosecution history just conveys the concept that Grauel does not disclose selecting stations (whether one or more) for reassignment. C-Cation asserts that this statement does not come close to a clear disavowal of claim scope. Dkt. 191 at 8-9.

Analysis

The "needs" dispute is similar to the dispute with regard to the "monitoring" step (discussed above) which precedes the determining step. The rationale and specification passages cited above with regard to monitoring are equally persuasive with regard to the "determining" step. In the context of the patent, it is clear that a channel that "needs" to be reassigned is not limited to a completely failed channel that can provide no communication for a particular remote terminal, but could also result from something less than a complete failure, such as from traffic demands, past collision counts, bandwidth, etc. that impact the desirability of a channel. Moreover, Defendants' construction would render claim 4's overload sensing step meaningless

(similar to claim 3 with the monitoring step). A channel that is overloading may be slow, have poor quality, etc. However, Defendants have not pointed to anything in the intrinsic record that would limit an overloaded channel to being a channel that can provide no communication of any kind for a particular remote terminal. Having determined that “needs” is not limited to a complete failure in which no communication can be provided, the Court finds that the term needs no further construction and its ordinary meaning should be applied.

As to the specific terminal issue, there is no clear disclaimer in the specification that requires a determination to be made with respect to a specific remote terminal. The recitation of “any individual mobile radio station for reassignment” does not clearly mandate “only one” station for reassignment but rather could equally be read to mean that more than one station may be selected for reassignment. Dkt. 188, Ex. 7 at 13. In the context of the intrinsic record, where multiple channels are being analyzed and pools of channels exist, the reading of “one of said plurality” of terminals to mean “only one” specific terminal is an unreasonable interpretation of the file history.

For these reasons, the Court determines that the term does not require additional construction, and the plain and ordinary meaning should be applied.

H. “is available” (Claims 1 and 5)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction.	having spare capacity and acceptable reliability.

Parties’ Positions

C-Cation

C-Cation asserts the term is clear on its face and that Defendants import limitations not found in the claim (requiring both spare capacity and acceptable reliability). Dkt. 187 at 23.

Defendants

Defendants assert that C-Cation’s confusing interchangeable use of “availability” and “usability” in the “monitoring” term provides indication that the jury should not be left to speculate as to the terms’ meaning. Defendants cite to 6:19-23 as teaching that a channel with spare capacity might not be chosen because of noise factors.

Analysis

The surrounding claim language provides context to the term “is available” that is instructive. The term is found in the language “determining whether a different and suitable signalling data channel is available.” Thus, the claim language itself provides guidance to what the other channel should be: different and suitable. In the context of the entire phrase, “available” means merely being present for use. The term “available” in such context does not mandate spare capacity and acceptable reliability. Furthermore, Defendants have not pointed to disavowal in the specification that limits “available” to those factors.

Having rejected Defendants’ narrow construction, the Court finds that “**is available**” does not need further construction.

I. “reassigning by said central controller said remote terminal to a different and suitable signalling data channel” (Claim 1)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction other than the phrases “remote terminal” and “signalling data channel” as set forth above.	commanding the remote terminal, by the central controller and based upon the determinations of need and availability, to change to a different and suitable signalling data channel

Parties’ Positions

C-Cation

C-Cation asserts that the term is clear on its face. C-Cation asserts that Defendants’ construction improperly adds the limitation “commanding the remote terminal . . . to change.” C-Cation asserts that Defendants are attempting to redefine an entire method step rather than construe individual terms. Dkt. 187 at 26.

Defendants

Defendants assert that the specification makes clear that the central controller reassigns remote terminals: “the central controller will . . . command[] the remote terminal to tune to the assigned channels.” Dkt. 188 at 23 (quoting 8:50-53 and citing 8:61-9:6). Defendants assert their construction is more comprehensible to the jury than the awkward syntax of the original claim language. Dkt. 188 at 23. Defendants assert that the other elements of their construction are inherent in the claim as the reassignment step is the outcome of the monitoring and determining steps that precede it and the claim itself requires a “different and suitable” channel. Dkt. 188 at 23.

Analysis

The Court agrees that Defendants’ construction improperly imports limitations from the specification into the claim even though there is no evidence of a disavowal or disclaimer of claim scope. As claimed, reassignment by the central controller is required. However, there is

no evidence to support the particular limitations that Defendants seek to include in this term concerning how the controller accomplishes the reassignment. Further, to the extent Defendants' construction incorporates limitations found elsewhere in the claim, Defendants have not shown the need for such redundancy to make the claim term understandable. The surrounding claim language recites that the reassignment is based upon the two determining steps, and thus the additional "based upon" language sought by Defendants is not necessary. The Court is not persuaded that the original claim language is so awkward as to make the claim difficult for the jury to understand.

Having rejected Defendants' proposed construction, the Court finds that the plain and ordinary meaning should be applied, and that **no further construction is necessary**.

J. "new signalling data channel" (Claim 5)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
Phrase should be given its ordinary meaning and does not require additional construction other than the phrase "signalling data channel" as set forth above.	unused signalling data channel

The Court adopts the parties' agreed construction (offered at the claim construction hearing) that "**new signalling data channel**" means "**a channel that was not then being used as a signalling data channel.**" Tr. at 91-95.

K. “polling a plurality of said plurality of remote terminals simultaneously”³ (Claim 6)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
soliciting two or more of the plurality of remote terminals simultaneously	soliciting at the same time all terminals assigned to a given forward signalling data channel.

The parties dispute whether the first usage of “plurality” means “two or more” or means “all.”

Parties’ Positions

C-Cation

C-Cation argues that replacing the first usage of “plurality” with “two or more” will make the claim more understandable to the jury. C-Cation asserts that “simultaneously” is easily understood and needs no further construction. C-Cation objects to Defendants’ replacement of the first usage of “plurality” with “all.” C-Cation asserts that the patent drafter used “plurality,” a well understood patent claim term which means two or more. Dkt. 187 at 28 (citing *Dayco Prods. v. Total Containment Inc.*, 258 F. 3d 1317, 1327-28 (Fed. Cir. 2001) (“In accordance with standard dictionary definitions, we have held that ‘plurality,’ when used in a claim, refers to two or more items, absent some indication to the contrary); *York Prods., Inc., v. Cent. Tractor Farm & Family Ctr.*, 99 F. 3d 1568, 1575 (Fed. Cir. 1996); *ResQNet.Com, Inc. v. Lansa, Inc.*, 346 F. 3d 1374, 1382 (Fed. Cir. 2003) (plurality does not mean all where there were no “expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”)).

Defendants

Defendants assert that the first step of the signalling protocol involves a general polling scheme that solicits at the same time a response from all terminals assigned to a given forward

³ The parties have agreed that “polling” should be construed as “soliciting.” Dkt. 188 at 24, n. 13 and Dkt. 192-1 at 11.

signalling data channel. Dkt. 188 at 24 (citing 2:36-58). Defendants point to the specification passage at 2:54-58 which states that the central controller initiates the general polling to “solicit request from all terminals assigned to the signalling data channel.” Defendants assert that every reference to the polling scheme initiates a poll to every remote terminal assigned to a given forward signalling data channel. Dkt. 188 at 25 (citing 2:25-28, 2:54-58, 3:55-58, 7:51-60, 9:64-65). Defendants assert that the polling scheme is not merely exemplary, but rather is the invention because every embodiment implements the function. Defendants assert that C-Cation’s construction, if implemented, would not serve the purpose of identifying pending requests that create contention on the network as only a general poll of remote terminals on a channel would ensure detection of the two or more remote terminals having pending requests as required by the claim. Defendants assert that their construction also captures the meaning of “plurality of plurality” since “all terminals” on a given signalling channel reflect a subset of all terminals on the system.

Analysis

C-Cation has pointed to Federal Circuit cases which make clear that in patent parlance the ordinary meaning of “plurality” means “two or more.” Defendants primarily argue that the specification only teaches polling all the terminals on a given signalling channel. However, *Phillips* counsels that even if a patent describes only a single embodiment, the claims of the patent need not be construed as being limited to that embodiment. *Phillips*, 415 F.3d at 1323. Here there is no ambiguity in the claim language and Defendants have not pointed to any passages manifesting a disavowal of the ordinary meaning of the term “plurality.”

The Court finds that “**polling a plurality of said plurality of remote terminals simultaneously**” means “**soliciting two or more of the plurality of remote terminals simultaneously**.”

L. “resolving contention . . . by said central controller if there is a pending request from more than one remote terminal on the same signalling data channel” (Claim 6)

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
“Contention” should be construed as “a condition when two or more remote terminals try to transmit data at the same time,” and otherwise, the phrase should be given its ordinary meaning and does not require additional construction other than the phrases “remote terminal,” and “signalling data channel” as set forth above.	using selective polling by the central controller to allow transmission by only a single remote terminal after detecting collision of two or more terminals’ requests on a signalling data channel.

The basic dispute between the parties is whether “resolving” requires the use of the particular contention resolution technique described in the specification (selective polling).

Parties’ Positions

C-Cation

C-Cation asserts its construction of “contention” is supported in the specification where it is described that collisions may result when two or more remote terminals attempt to transmit data at the same time. Dkt. 187 at 29-30 (citing 7:19-26; 6:37-39). C-Cation also cites to an IEEE dictionary defining the term as “when two or more locations try to transmit at the same time.” Dkt. 187 at 30. At the claim construction hearing, C-Cation agreed to a portion of Defendants’ construction. In particular, C-Cation agreed that “contention” is a “collision of two or more terminals’ requests.” Tr. at 97-99. C-Cation asserts that the rest of the method step is understandable to one skilled in the art. C-Cation asserts that Defendants’ construction of the entire method step is not an exercise in construing particular terms, but is instead an attempt to redraft the entire claim step. C-Cation asserts that Defendants’ construction improperly limits the step to “selective polling.” C-Cation asserts that “polling,” let alone “selective polling” is not recited in step (c) of claim 6. Dkt. 191 at 10.

Defendants

Defendants refer to the following passage of the specification:

This invention differs from the prior art in that multiple access is controlled through overlapping polling sequence executing on multiple channels in a parallel fashion. Only when collision occurs, this method will enter a selective polling sequence for contention resolution.

2:25-30. Defendants argue that the claims cannot be broader than the invention set forth in the specification, particularly when the patentee uses “the invention” language, relying on *On-Demand Machine Corporation v. Ingram Industries, Inc.*, 442 F.3d 1331, 1340 (Fed. Cir. 2006) and *Honeywell International, Inc. v. ITT Industries, Inc.*, 452 F.3d 1312, 1381 (Fed. Cir. 2006).

Defendants assert that the only method of contention resolution disclosed is selective polling. Defendants cite to a number of additional passages as indicating that only selective polling is taught for contention resolution: “in the case of collision, the central controller engages the remote terminals in a selective polling process to resolve contention” (Abstract); “only when collision is detected, the central controller starts to poll selectively for resolution” (2:57-58); “the decision process is designed to improve the effectiveness of the selective polling coverage during the contention resolution process” (3:65-67); “in case of collision or transmission error, the central controller enters a selective polling cycle” (7:64-67); “in case of collision with other remote terminals, the remote terminal follows the instructions from the central controller through selective polling process to resolve the contention” (9:14-17). Defendants also cite to Figures 10-12 and 14-15 (and 4:48-67) as depicting diagrams and decision graphs of selective polling for contention resolution. Dkt. 188 at 26-27. Defendants assert there is no other contention resolution process disclosed in the specification.

Defendants further cite to the prosecution history, asserting that the patentee distinguished the invention from the Christensen CSMA protocol based on contention resolution. Dkt. 188 at 27 (citing Ex. 7 at 15, Amendment A October 1, 1995).

Analysis

As to the meaning of “contention,” based upon C-Cation’s agreement at the claim construction hearing, the parties no longer dispute the basic meaning of that term. Defendants however still assert that the “resolving” step is limited to the use of selective polling.

Defendants’ arguments in essence rely on an assertion that (1) “the invention” was described as “selective polling,” (2) only selective polling was disclosed in the specification for resolving contention, and (3) the prosecution history mandates selective polling. Defendants’ assertions however fail when the intrinsic record as a whole is considered. First, the claim language itself conflicts with Defendants’ positions. Polling is explicitly recited in step (b) of the claim. However, step (c) of the claim (the resolving contentions step) was not drafted to include polling but rather merely to provide that the contention is resolved by the central controller. It is instructive that polling is recited in one element but not the other.

As to the cited characterization of “the invention,” this passage does not clearly distinguish the prior art based solely on the use of selective polling. What the passage in question states is that “the invention differs from the prior art” because “multiple access is controlled through overlapping polling sequence executed on multiple channels in a parallel fashion.” 2:25-28. It is only the next sentence in which it is stated that for collisions “this method will enter a selective polling sequence for contention resolution.” 2:28-30. It is clear that the prior art was already being primarily distinguished based on aspects of the process that occur before the resolution of the contention occurs.

As to the prosecution history, the claims already included “resolving contention” when the patentee amended the claim by specifying that the “resolving” is performed “by said central controller . . .” Dkt. 188 Ex. 7 at 5 (Amendment A Dated October 1, 1995). When making the amendment, the patentee stated with regard to element (d) of the claim that:

Christensen’s Hub Controller is not involved in contention resolution. Instead it lets the terminals follow the CSMA protocol in case of collision.

Id. at 16. It is clear that the patentee was emphasizing that in the prior art the general contention resolution was not performed by the controller. No mention of polling, let alone selective polling, was provided with regard to the argument for this claim element. The prosecution history bolsters C-Cation’s position.

The only remaining justification for limiting the claims to selective polling is the argument that the only embodiment of resolving contentions disclosed in the specification is selective polling. However, there is no clear disclaimer or disavowal as to the terms “resolution” or “contention.” Furthermore, as described above, the structure and wording of the claim and the prosecution history support C-Cation’s position. Having determined that “resolving” is not limited to the particular disclosed technique of selective polling, the Court finds that no further construction of the term is needed other than a construction of contention.

The Court construes “**contention**” to mean “**collision of two or more terminals’ requests.**”

**M. “said predetermined signalling data channel” (Claim 1 and 4) and
“said predetermined channel” (Claims 1 and 5)**

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
one of the signalling data channels in use	Indefinite under 35 USC 112 ¶ 2 due to lack of any express or implied antecedent basis.

Parties’ Positions

Defendants

Defendants assert that these two terms, found in steps (c) and (d) of claim 1, are indefinite because it is unclear what the antecedent basis is for the article “said.” In particular, Defendants assert that the initial use of “predetermined” in the claims comes in the phrase “pair of predetermined signalling data channels.” Dkt. 188 at 29. Defendants assert that “said” must refer to a particular data channel, however it is unclear which channel is being referenced. Defendants assert that the specification does not resolve the ambiguity because in the specification the channels are coupled in pairs and the remote terminal is assigned a pair of channels. 3:47-50, 7:8-10.

Defendants object to C-Cation’s construction that “said” may refer to either of the channels of the pair. Defendants assert that C-Cation’s specification citation (8:44-50) merely discloses that channel selection is made from a pool of resources and that the terminal will be assigned to a group. Dkt. 188 at 29. Defendants assert that the specification then reiterates that a remote terminal “tunes to the assigned FD and RD channels” which Defendants state is still a pair. Dkt. 188 at 29 (quoting 9:3-5). Defendants assert this situation is akin to the *Synqor* case where an original reference was made to plural windings including primary windings and secondary windings and the claim later recited “plural of the windings.” Dkt. 188 at 30. Defendants assert that, like C-Cation, the *Synqor* patentee argued the term could refer to either winding yet the Court rejected this argument explaining that the “issue is precision and the

ability of one of ordinary skill in the art to discern the claim scope, not lack of written description.” Dkt. 188 at 30 (quoting *Synqor, Inc. v. Artesyn Technologies, Inc.* Case No. 2:07-CV-497, 2010 WL 2991037 (E.D. Tex. July 26, 2010)).

C-Cation

C-Cation cites to a variety of cases for the proposition that lack of antecedent basis does not render a claim invalid if it can be construed based on an understanding of one skilled in the art. Dkt. 187 at 24. C-Cation asserts that given the recitation of the terms in the claim steps it would be understandable to one skilled in the art that the “said” channel refers to one of the previously recited “pair of predetermined signalling data channels”, namely either the forward or reverse channel. Dkt. 187 at 24-25. C-Cation asserts that the specification supports this construction:

If there is no available signalling data channel already in use, the central controller will check for available channel from the pool of transmitters and/or the poll of receivers, and proceeds with allocation if there is available channel from the pool (or a pair in case that neither the forward nor the reverse signalling data channels are available).

8:44-50.

C-Cation further asserts that Defendants’ position hinges on the pairs being “uniquely coupled,” a position C-Cation objected to with regard to the “pair” term. Dkt. 191 at 9. C-Cation asserts that reliance on *Synqor* is misplaced because in *Synqor* the parties agreed that the claim was inoperable as written and that addressing the antecedent basis issue required rewriting the claims.

Analysis

“Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.”

Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1250 (Fed. Cir. 2008) (quoting

Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005)). That is, the “standard [for finding indefiniteness] is met where an accused infringer shows by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” *Halliburton*, 514 F.3d at 1249-50.

In light of the claim language itself, C-Cation points to the most reasonable interpretation as to antecedent basis for the claim terms. Defendants rely on the channels being uniquely coupled together. However, as noted above, the Court has rejected the requirement that the channels be uniquely coupled together. The claim language refers in element (a) to each terminal “initially assigned to a pair of predetermined signalling data channels.” Subsequently in elements (c) and (d) the determining steps are described with regard to a single channel: “determining whether . . . needs to be reassigned to a different signalling data channel” and “determining whether a different and suitable signalling data channel is available.” In both cases, claim elements (b) and (c) end with the reference “other than said predetermined signalling data channel.”

In the context of the claim language, it is clear that a determining step is being done with regard to a single channel, and that channel is one that is other than the earlier recited pair of predetermined signalling data channels. The specification passage at 8:45-50 describes checking for the availability of a single channel. Further, the specification describes an alternate case where two channels are checked if neither forward nor reverse channels are available. Likewise when determining factors of availability, the “factors will be calculated for **each** of the existing signalling channels.” 8:35-41 (emphasis added). Thus, the specification also provides support for C-Cation’s position that one of the channels is being referenced. In light of the claim

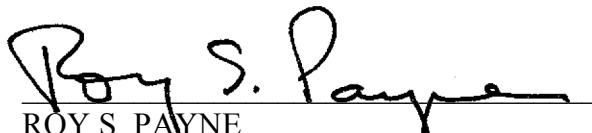
language itself and the specification, the term is amenable to construction and not insolubly ambiguous.

The Court construes “**said predetermined signalling data channel**” and “**said predetermined channel**” to mean “**one of the pair of predetermined signalling data channels**.”

CONCLUSION

The Court adopts the above constructions. The parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 3rd day of July, 2013.



ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE